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By Messenger

May 20, 1994

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MAY 20 1994

Mr. William Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, NW - Room 222  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

RE: Ex Parte Presentation GEN Docket No. 90-314

Dear Mr. Caton:

Pursuant to section 1.1206 of the Commission's rules, this letter constitutes notification that John Barrett, Chief Engineer, Microwave Technologies; Russ Coffin, Director, PCS Network Switching, Ron Cross, Director, Regulatory Policy; Ihor Nakonecznyj, Senior Manager, U.S. Regulatory; and the undersigned, all of Northern Telecom, met with the Commission's PCS Task Force on May 17, 1994. Commission staff present at the meeting included Ralph Haller, Chief of the Private Radio Bureau; Julia Kogan, Private Radio Bureau; David Reed, Greg Rosston, Don Gips of the Office of Plans and Policy and Fred Thomas of the Office of Engineering and Technology. The purpose of the meeting was to present Northern Telecom's views on the need for the Commission to authorize adequate power for licensed PCS and to adopt the complete WINForum spectrum etiquette plan.

The attachments to this letter were the basis for the discussion and were distributed to the Commission staff at the meeting. In addition, these attachments are being sent with this letter to Jules Knapp, Chief, Authorization and Evaluation Division; Byron Marchant, Senior Advisor to Commissioner Andrew W. Barrett; and Bruce Franca, Deputy Chief of the Commission's Office of Engineering and Technology.

An original and one copy of this letter including attachments are being provided.

Sincerely,

  
Raymond L. Strassburger  
Director, Government Relations - Telecommunications Policy

RLS/gj  
Attachments

cc: Ralph Haller, Julia Kogan  
David Reed, Greg Rosston, Don Gips  
Bruce Franca, Fred Thomas, Byron Marchant, Julius Knapp

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## Unlicensed Spectrum Rules

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Northern Telecom believes that the interests of America would be best served if the provisions of the WINForum Etiquette were implemented as submitted.

The WINForum Etiquette is the result of many months of intensive technical debate and compromise - - it represents the collective view of the industry experts as to what will be required to enable the widest range of products to co-exist with the minimum of mutual interference. It is designed to provide scope for the greatest amount of flexibility for innovation without favoring or penalizing any one technology.

Northern Telecom applauds FCC's implementation of the WINForum Etiquette. We recommend the adoption of the total WINForum Etiquette including the following:

- WINForum implemented a rule to permit devices with more than one radio to access the spectrum. This capability was omitted from the Second R&O. We recommend re-insertion of this capability by adding section 15.321 (c) (11) as outlined in the attachment.
- WINForum examined the benefits of a "packing " rule and rejected such a provision as being totally unworkable since it prevents access to spectrum in many "real" situations. We recommend removal of the FCC rule 15.321 (b) inserted in the Second R&O.
- The current FCC rules do not permit two way operation, such as a conversation. We recommend re-insertion of the WINForum rule as 15.321 (c) (10) as outlined in the attachment to permit duplex operation.
- To maximize co-existence and minimize mutual interference, the WINForum Etiquette provided aggressive but achievable emission limits. These limits were modified by the Commission both in measurement technique and in level. We recommend the more stringent emission limits as recommended by WINForum and in rule 15.321 (d) as outlined in the attachment.
- Northern Telecom supports the 1.25 MHz channelization recommended by WINForum because of its efficient usage of the spectrum and urges the FCC to extend this channelization to all parts of the isochronous spectrum.
- The Second R&O does not provide for emission limits between the licensed and unlicensed bands. These limits are essential for reliable operation of services. We recommend modification of rule 99.234 as outlined in the attached.

# **Unlicensed Spectrum Rules**



## **Access for devices with more than one radio**

15.321 (c) (11) Before initiating transmission, devices which are in a state which prevents them from monitoring during their intended transmit interval due to receiver blocking from a co-located (within one meter) transmitter of the same system, may monitor the portions of the time and spectrum windows in which they intend to receive over a period of at least 10 milliseconds to determine if the access criteria are met so long as the monitored spectrum is within the 1.25 MHz frequency channel(s) already occupied by that device or co-located (within one meter) co-operating group of devices. The receive monitoring interval must total at least 45% of the 10 millisecond interval.

## **Duplex Operation**

15.321 (c) (10) An initiating device may attempt to establish a duplex connection by monitoring both its intended transmit and receive time and spectrum windows in accordance with 15.321 (c). Time and spectrum window access selection for the initiating device shall be based on the higher measured power of the intended transmit or receive time and spectrum windows. If the power detected by the responding device can be decoded as a duplex connection signal from an interoperable device (the initiating device), then the responding device may immediately begin transmitting on the receive time and spectrum window of the initiating device.

## **Licensed to Unlicensed Emission Limits**

99.234 (a) On any frequency outside the licensed PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P) by at least  $43 + \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation.

## **PCS Base Station Power Considerations**

- Licensed PCS needs the functional equivalent of 1600W EIRP Base Station power to be a viable business. Directly authorizing 1600w EIRP is supported in the PCS Record, with virtually no dissent.
- Hand Set power does not need to be increased to form a balanced link with a 1600w base station, if new antenna technology is used. High Gain Antenna systems offer increased range performance encouraging lower power handsets.
- Increasing PCS base station power from 100W to 1600W does not create interference problems for incumbent microwave operators or between licensed operators.
- NTI is concerned that a further Notice of Proposed Rule Making on PCS power would further delay essential PCS rule making and further delay the establishment of the US PCS industry.
- Alternative methods of describing authorized power are acceptable which will achieve the consensus for higher power described in the PCS record.
  - Scientifically acceptable methods starting with the new ANSI/IEEE Guidelines and describing power in  $\text{mW}/\text{cm}^2$  or  $\text{W}/\text{Hz}$  are acceptable.

or

- Base Station power measured at the Antenna Coupler (or equivalent) no greater than 100W and antenna gain no greater than 30dB.

and

PCS base station power should not exceed the new ANSI/IEEE Guidelines outside the minimum approach distance for the Base Station.



**northern  
telecom**

## 1600W & HIGH GAIN ANTENNA

